

Making a Phyletic Tree

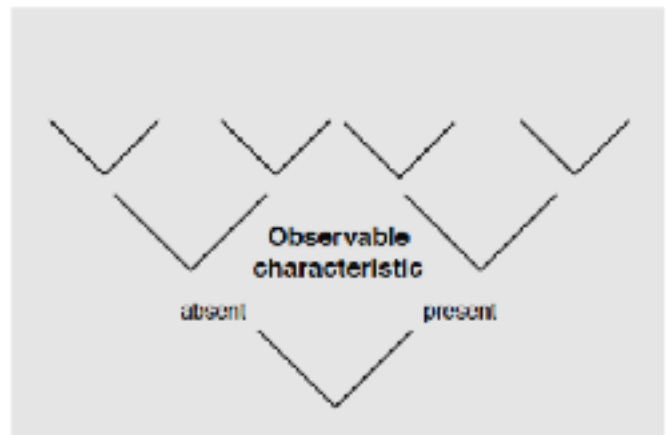
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In order to study the evolutionary connections among common groups of organisms, a tool has been devised called the phyletic tree. Your objectives are to learn to describe character traits of a group of objects based on similarity of traits and draw an arrangement of objects in the form of a branching (phyletic) tree.

- A. You will be given an assortment of objects. Divide the objects into two groups based on the presence or absence of some observable characteristic. Place the groups of objects with the characteristic present on one end of the drawing paper, and the group of objects with the characteristic absent on the opposite end of the paper.
- B. Use a ruler to draw two lines, forming a V, at the bottom center of your drawing paper. Each line should be about two inches long.
- C. Label one end of the V present, and the other end absent. You have now begun to produce your phyletic tree.
- D. Examine the group of objects labeled characteristic-present. Choose a new characteristic which will allow you to divide the group into two smaller subgroups. Name the opposite state of that trait and subdivide into the groups.
- E. Draw two new lines with a ruler, forming a V-shape directly above the characteristic-present branch, and draw two new lines with a ruler, forming a V-shape directly above the characteristic-absent branch. Label the two ends of the V
- F. Continue to subdivide each side of the tree until all objects are classified and are the only member of their final grouping.



Analyze and Conclude:

- 1. Which objects did you find most difficult to subdivide? Give details to explain why.
- 2. How did the characteristics of color or size help you in your tree?
- 3. How was this phyletic tree similar to ones used to study the evolution of organisms?
- 4. How is a phyletic tree useful in studying evolution?